RAW SEQUENCE LISTING DATE: 07/23/2001
PATENT APPLICATION: US/09/807,148 TIME: 18:05:42

Input Set : A:\Pto.amc
Output Set: N:\CRF3\07232001\I807148.raw

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      3 <110> APPLICANT: Tosato, Giovanna et al.
      5 <120> TITLE OF INVENTION: Use of Calreticulin and Calretuculin Fragments to
      6       Inhibit Endothelial Cell Growth and Angiogenesis, and
      7       Suppress Tumor Growth
      9 <130> FILE REFERENCE: 4239 53372
C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/807,148
C--> 12 <141> CURRENT FILING DATE: 2001-06-04
     14 <150> PRIOR APPLICATION NUMBER: US 60/103,438
     15 <151> PRIOR FILING DATE: 1998-10-06
     17 <160> NUMBER OF SEQ ID NOS: 35
     19 <170> SOFTWARE: PatentIn Ver. 2.0
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     23 <212> TYPE: DNA
     24 <213> ORGANISM: Homo sapiens
     26 <220> FEATURE:
     27 <221> NAME/KEY: CDS
     28 <222> LOCATION: (1)..(1251)
     30 <400> SEQUENCE: 1
     31 atg ctg cta tcc gtg ccg ttg ctg ctc ggc ctc ctc ggc ctg gcc gtc   48
     32 Met Leu Leu Ser Val Pro Leu Leu Leu Gly Leu Leu Gly Leu Ala Val
     33   1               5                  10                  15
     35 gcc gag cct gcc gtc tac ttc aag gag cag ttt ctg gac gga gac ggg   96
     36 Ala Glu Pro Ala Val Tyr Phe Lys Glu Gln Phe Leu Asp Gly Asp Gly
     37             20                  25                  30
     39 tgg act tcc cgc tgg atc gaa tcc aaa cac aag tca gat ttt ggc aaa  144
     40 Trp Thr Ser Arg Trp Ile Glu Ser Lys His Lys Ser Asp Phe Gly Lys
     41         35                  40                  45
     43 ttc gtt ctc agt tcc ggc aag ttc tac ggt gac gag gag aaa gat aaa  192
     44 Phe Val Leu Ser Ser Gly Lys Phe Tyr Gly Asp Glu Glu Lys Asp Lys
     45      50                  55                  60
     47 ggt ttg cag aca agc cag gat gca cgc ttt tat gct ctg tcg gcc agt  240
     48 Gly Leu Gln Thr Ser Gln Asp Ala Arg Phe Tyr Ala Leu Ser Ala Ser
     49  65                  70                  75                  80
     51 ttc gag cct ttc agc aac aaa ggc cag acg ctg gtg gtg cag ttc acg  288
     52 Phe Glu Pro Phe Ser Asn Lys Gly Gln Thr Leu Val Val Gln Phe Thr
     53                  85                  90                  95
     55 gtg aaa cat gag cag aac atc gac tgt ggg ggc ggc tat gtg aag ctg  336
     56 Val Lys His Glu Gln Asn Ile Asp Cys Gly Gly Gly Tyr Val Lys Leu
     57             100                 105                 110
     59 ttt cct aat agt ttg gac cag aca gac atg cac gga gac tca gaa tac  384
     60 Phe Pro Asn Ser Leu Asp Gln Thr Asp Met His Gly Asp Ser Glu Tyr
     61         115                 120                 125
     63 aac atc atg ttt ggt ccc gac atc tgt ggc cct ggc acc aag aag gtt  432
     64 Asn Ile Met Phe Gly Pro Asp Ile Cys Gly Pro Gly Thr Lys Lys Val
     65     130                 135                 140
     67 cat gtc atc ttc aac tac aag ggc aag aac gtg ctg atc aac aag gac  480
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RAW SEQUENCE LISTING DATE: 07/23/2001
PATENT APPLICATION: US/09/807,148 TIME: 18:05:42

Input Set : A:\Pto.amc
Output Set: N:\CRF3\07232001\I807148.raw

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 68 His Val Ile Phe Asn Tyr Lys Gly Lys Asn Val Leu Ile Asn Lys Asp
 69 145                 150                 155                 160
 71 atc cgt tgc aag gat gat gag ttt aca cac ctg tac aca ctg att gtg   528
 72 Ile Arg Cys Lys Asp Asp Glu Phe Thr His Leu Tyr Thr Leu Ile Val
 73                 165                 170                 175
 75 cgg cca gac aac acc tat gag gtg aag att gac aac agc cag gtg gag   576
 76 Arg Pro Asp Asn Thr Tyr Glu Val Lys Ile Asp Asn Ser Gln Val Glu
 77             180                 185                 190
 79 tcc ggc tcc ttg gaa gac gat tgg gac ttc ctg cca ccc aag aag ata   624
 80 Ser Gly Ser Leu Glu Asp Asp Trp Asp Phe Leu Pro Pro Lys Lys Ile
 81         195                 200                 205
 83 aag gat cct gat gct tca aaa ccg gaa gac tgg gat gag cgg gcc aag   672
 84 Lys Asp Pro Asp Ala Ser Lys Pro Glu Asp Trp Asp Glu Arg Ala Lys
 85     210                 215                 220
87 atc gat gat ccc aca gac tcc aag cct gag gac tgg gac aag ccc gag   720
88 Ile Asp Asp Pro Thr Asp Ser Lys Pro Glu Asp Trp Asp Lys Pro Glu
89 225                 230                 235                 240
91 cat atc cct gac cct gat gct aag aag ccc gag gac tgg gat gaa gag   768
92 His Ile Pro Asp Pro Asp Ala Lys Lys Pro Glu Asp Trp Asp Glu Glu
93                 245                 250                 255
95 atg gac gga gag tgg gaa ccc cca gtg att cag aac cct gag tac aag   816
96 Met Asp Gly Glu Trp Glu Pro Pro Val Ile Gln Asn Pro Glu Tyr Lys
97             260                 265                 270
99 ggt gag tgg aag ccc cgg cag atc gac aac cca gat tac aag ggc act   864
100 Gly Glu Trp Lys Pro Arg Gln Ile Asp Asn Pro Asp Tyr Lys Gly Thr
101         275                 280                 285
103 tgg atc cac cca gaa att gac aac ccc gag tat tct ccc gat ccc agt   912
104 Trp Ile His Pro Glu Ile Asp Asn Pro Glu Tyr Ser Pro Asp Pro Ser
105     290                 295                 300
107 atc tat gcc tat gat aac ttt ggc gtg ctg ggc ctg gac ctc tgg cag   960
108 Ile Tyr Ala Tyr Asp Asn Phe Gly Val Leu Gly Leu Asp Leu Trp Gln
109 305                 310                 315                 320
111 gtc aag tct ggc acc atc ttt gac aac ttc ctc atc acc aac gat gag  1008
112 Val Lys Ser Gly Thr Ile Phe Asp Asn Phe Leu Ile Thr Asn Asp Glu
113                 325                 330                 335
115 gca tac gct gag gag ttt ggc aac gag acg tgg ggc gta aca aag gca  1056
116 Ala Tyr Ala Glu Glu Phe Gly Asn Glu Thr Trp Gly Val Thr Lys Ala
117             340                 345                 350
119 gca gag aaa caa atg aag gac aaa cag gac gag gag cag agg ctt aag  1104
120 Ala Glu Lys Gln Met Lys Asp Lys Gln Asp Glu Glu Gln Arg Leu Lys
121         355                 360                 365
123 gag gag gaa gaa gac aag aaa cgc aaa gag gag gag gag gca gag gac  1152
124 Glu Glu Glu Glu Asp Lys Lys Arg Lys Glu Glu Glu Glu Ala Glu Asp
125     370                 375                 380
127 aag gag gat gat gag gac aaa gat gag gat gag gag gat gag gag gac  1200
128 Lys Glu Asp Asp Glu Asp Lys Asp Glu Asp Glu Glu Asp Glu Glu Asp
129 385                 390                 395                 400
131 aag gag gaa gat gag gag gaa gat gtc ccc ggc cag gcc aag gac gag  1248
132 Lys Glu Glu Asp Glu Glu Glu Asp Val Pro Gly Gln Ala Lys Asp Glu
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RAW SEQUENCE LISTING DATE: 07/23/2001
PATENT APPLICATION: US/09/807,148 TIME: 18:05:42

Input Set : A:\Pto.amc
Output Set: N:\CRF3\07232001\I807148.raw

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135 ctg                                                             1251
136 Leu
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140 <211> LENGTH: 417
141 <212> TYPE: PRT
142 <213> ORGANISM: Homo sapiens
144 <400> SEQUENCE: 2
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146   1               5                  10                  15
148 Ala Glu Pro Ala Val Tyr Phe Lys Glu Gln Phe Leu Asp Gly Asp Gly
149              20                  25                  30
151 Trp Thr Ser Arg Trp Ile Glu Ser Lys His Lys Ser Asp Phe Gly Lys
152          35                  40                  45
154 Phe Val Leu Ser Ser Gly Lys Phe Tyr Gly Asp Glu Glu Lys Asp Lys
155      50                  55                  60
157 Gly Leu Gln Thr Ser Gln Asp Ala Arg Phe Tyr Ala Leu Ser Ala Ser
158  65                  70                  75                  80
160 Phe Glu Pro Phe Ser Asn Lys Gly Gln Thr Leu Val Val Gln Phe Thr
161                  85                  90                  95
163 Val Lys His Glu Gln Asn Ile Asp Cys Gly Gly Gly Tyr Val Lys Leu
164             100                 105                 110
166 Phe Pro Asn Ser Leu Asp Gln Thr Asp Met His Gly Asp Ser Glu Tyr
167         115                 120                 125
169 Asn Ile Met Phe Gly Pro Asp Ile Cys Gly Pro Gly Thr Lys Lys Val
170     130                 135                 140
172 His Val Ile Phe Asn Tyr Lys Gly Lys Asn Val Leu Ile Asn Lys Asp
173 145                 150                 155                 160
175 Ile Arg Cys Lys Asp Asp Glu Phe Thr His Leu Tyr Thr Leu Ile Val
176                 165                 170                 175
178 Arg Pro Asp Asn Thr Tyr Glu Val Lys Ile Asp Asn Ser Gln Val Glu
179             180                 185                 190
181 Ser Gly Ser Leu Glu Asp Asp Trp Asp Phe Leu Pro Pro Lys Lys Ile
182         195                 200                 205
184 Lys Asp Pro Asp Ala Ser Lys Pro Glu Asp Trp Asp Glu Arg Ala Lys
185     210                 215                 220
187 Ile Asp Asp Pro Thr Asp Ser Lys Pro Glu Asp Trp Asp Lys Pro Glu
188 225                 230                 235                 240
190 His Ile Pro Asp Pro Asp Ala Lys Lys Pro Glu Asp Trp Asp Glu Glu
191                 245                 250                 255
193 Met Asp Gly Glu Trp Glu Pro Pro Val Ile Gln Asn Pro Glu Tyr Lys
194             260                 265                 270
196 Gly Glu Trp Lys Pro Arg Gln Ile Asp Asn Pro Asp Tyr Lys Gly Thr
197         275                 280                 285
199 Trp Ile His Pro Glu Ile Asp Asn Pro Glu Tyr Ser Pro Asp Pro Ser
200     290                 295                 300
202 Ile Tyr Ala Tyr Asp Asn Phe Gly Val Leu Gly Leu Asp Leu Trp Gln
203 305                 310                 315                 320
205 Val Lys Ser Gly Thr Ile Phe Asp Asn Phe Leu Ile Thr Asn Asp Glu
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RAW SEQUENCE LISTING DATE: 07/23/2001
PATENT APPLICATION: US/09/807,148 TIME: 18:05:42

Input Set : A:\Pto.amc
Output Set: N:\CRF3\07232001\I807148.raw

```
206                 325                 330                 335
208 Ala Tyr Ala Glu Glu Phe Gly Asn Glu Thr Trp Gly Val Thr Lys Ala
209             340                 345                 350
211 Ala Glu Lys Gln Met Lys Asp Lys Gln Asp Glu Glu Gln Arg Leu Lys
212         355                 360                 365
214 Glu Glu Glu Glu Asp Lys Lys Arg Lys Glu Glu Glu Glu Ala Glu Asp
215     370                 375                 380
217 Lys Glu Asp Asp Glu Asp Lys Asp Glu Asp Glu Glu Asp Glu Glu Asp
218 385                 390                 395                 400
220 Lys Glu Glu Asp Glu Glu Glu Asp Val Pro Gly Gln Ala Lys Asp Glu
221                 405                 410                 415
223 Leu
227 <210> SEQ ID NO: 3
228 <211> LENGTH: 400
229 <212> TYPE: PRT
230 <213> ORGANISM: Homo sapiens
232 <400> SEQUENCE: 3
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234   1               5                  10                  15
236 Thr Ser Arg Trp Ile Glu Ser Lys His Lys Ser Asp Phe Gly Lys Phe
237             20                  25                  30
239 Val Leu Ser Ser Gly Lys Phe Tyr Gly Asp Glu Glu Lys Asp Lys Gly
240         35                  40                  45
242 Leu Gln Thr Ser Gln Asp Ala Arg Phe Tyr Ala Leu Ser Ala Ser Phe
243     50                  55                  60
245 Glu Pro Phe Ser Asn Lys Gly Gln Thr Leu Val Val Gln Phe Thr Val
246 65                  70                  75                  80
248 Lys His Glu Gln Asn Ile Asp Cys Gly Gly Gly Tyr Val Lys Leu Phe
249                 85                  90                  95
251 Pro Asn Ser Leu Asp Gln Thr Asp Met His Gly Asp Ser Glu Tyr Asn
252             100                 105                 110
254 Ile Met Phe Gly Pro Asp Ile Cys Gly Pro Gly Thr Lys Lys Val His
255         115                 120                 125
257 Val Ile Phe Asn Tyr Lys Gly Lys Asn Val Leu Ile Asn Lys Asp Ile
258     130                 135                 140
260 Arg Cys Lys Asp Asp Glu Phe Thr His Leu Tyr Thr Leu Ile Val Arg
261 145                 150                 155                 160
263 Pro Asp Asn Thr Tyr Glu Val Lys Ile Asp Asn Ser Gln Val Glu Ser
264                 165                 170                 175
266 Gly Ser Leu Glu Asp Asp Trp Asp Phe Leu Pro Pro Lys Lys Ile Lys
267             180                 185                 190
269 Asp Pro Asp Ala Ser Lys Pro Glu Asp Trp Asp Glu Arg Ala Lys Ile
270         195                 200                 205
272 Asp Asp Pro Thr Asp Ser Lys Pro Glu Asp Trp Asp Lys Pro Glu His
273     210                 215                 220
275 Ile Pro Asp Pro Asp Ala Lys Lys Pro Glu Asp Trp Asp Glu Glu Met
276 225                 230                 235                 240
278 Asp Gly Glu Trp Glu Pro Pro Val Ile Gln Asn Pro Glu Tyr Lys Gly
279                 245                 250                 255
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RAW SEQUENCE LISTING DATE: 07/23/2001
PATENT APPLICATION: US/09/807,148 TIME: 18:05:42

Input Set : A:\Pto.amc
Output Set: N:\CRF3\07232001\I807148.raw

```
281 Glu Trp Lys Pro Arg Gln Ile Asp Asn Pro Asp Tyr Lys Gly Thr Trp
282             260                 265                 270
284 Ile His Pro Glu Ile Asp Asn Pro Glu Tyr Ser Pro Asp Pro Ser Ile
285         275                 280                 285
287 Tyr Ala Tyr Asp Asn Phe Gly Val Leu Gly Leu Asp Leu Trp Gln Val
288     290                 295                 300
290 Lys Ser Gly Thr Ile Phe Asp Asn Phe Leu Ile Thr Asn Asp Glu Ala
291 305                 310                 315                 320
293 Tyr Ala Glu Glu Phe Gly Asn Glu Thr Trp Gly Val Thr Lys Ala Ala
294                 325                 330                 335
296 Glu Lys Gln Met Lys Asp Lys Gln Asp Glu Glu Gln Arg Leu Lys Glu
297             340                 345                 350
299 Glu Glu Glu Asp Lys Lys Arg Lys Glu Glu Glu Glu Ala Glu Asp Lys
300         355                 360                 365
302 Glu Asp Asp Glu Asp Lys Asp Glu Asp Glu Glu Asp Glu Glu Asp Lys
303     370                 375                 380
305 Glu Glu Asp Glu Glu Glu Asp Val Pro Gly Gln Ala Lys Asp Glu Leu
306 385                 390                 395                 400
312 <210> SEQ ID NO: 4
313 <211> LENGTH: 180
314 <212> TYPE: PRT
315 <213> ORGANISM: Homo sapiens
317 <400> SEQUENCE: 4
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319   1               5                  10                  15
321 Thr Ser Arg Trp Ile Glu Ser Lys His Lys Ser Asp Phe Gly Lys Phe
322              20                  25                  30
324 Val Leu Ser Ser Gly Lys Phe Tyr Gly Asp Glu Glu Lys Asp Lys Gly
325          35                  40                  45
327 Leu Gln Thr Ser Gln Asp Ala Arg Phe Tyr Ala Leu Ser Ala Ser Phe
328      50                  55                  60
330 Glu Pro Phe Ser Asn Lys Gly Gln Thr Leu Val Val Gln Phe Thr Val
331  65                  70                  75                  80
333 Lys His Glu Gln Asn Ile Asp Cys Gly Gly Gly Tyr Val Lys Leu Phe
334                  85                  90                  95
336 Pro Asn Ser Leu Asp Gln Thr Asp Met His Gly Asp Ser Glu Tyr Asn
337             100                 105                 110
339 Ile Met Phe Gly Pro Asp Ile Cys Gly Pro Gly Thr Lys Lys Val His
340         115                 120                 125
342 Val Ile Phe Asn Tyr Lys Gly Lys Asn Val Leu Ile Asn Lys Asp Ile
343     130                 135                 140
345 Arg Cys Lys Asp Asp Glu Phe Thr His Leu Tyr Thr Leu Ile Val Arg
346 145                 150                 155                 160
348 Pro Asp Asn Thr Tyr Glu Val Lys Ile Asp Asn Ser Gln Val Glu Ser
349                 165                 170                 175
351 Gly Ser Leu Glu
352             180
355 <210> SEQ ID NO: 5
356 <211> LENGTH: 61
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Use of n and/or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to insure a corresponding explanation is presented in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY DATE: 07/23/2001
PATENT APPLICATION: US/09/807,148 TIME: 18:05:43

Input Set : A:\Pto.amc
Output Set: N:\CRF3\07232001\I807148.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:620 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:10
L:629 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:639 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:11
L:644 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:11
L:653 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/807,148
DATE: 07/23/2001
TIME: 18:05:43

PCT

RAW SEQUENCE LISTING DATE: 07/05/2001
PATENT APPLICATION: US/09/807,148 TIME: 15:36:34

Input Set : A:\Sequence Listing.txt
Output Set: N:\CRF3\07032001\I807148.raw

Does Not Comply
Corrected Diskette Needed

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      3 <110> APPLICANT: Tosato, Giovanna et al.
      5 <120> TITLE OF INVENTION: Use of Calreticulin and Calretuculin Fragments to
      6       Inhibit Endothelial Cell Growth and Angiogenesis, and
      7       Suppress Tumor Growth
      9 <130> FILE REFERENCE: 4239 53372
C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/807,148
C--> 12 <141> CURRENT FILING DATE: 2001-06-04
     14 <150> PRIOR APPLICATION NUMBER: US 60/103,438
     15 <151> PRIOR FILING DATE: 1998-10-06
     17 <160> NUMBER OF SEQ ID NOS: 35
     19 <170> SOFTWARE: PatentIn Ver. 2.0

ERRORED SEQUENCES

    979 <210> SEQ ID NO: 35
    980 <211> LENGTH: 6
    981 <212> TYPE: PRT
    982 <213> ORGANISM: Artificial Sequence
    984 <220> FEATURE:
    985 <223> OTHER INFORMATION: Description of Artificial Sequence:Portion of
    986       retinoic acid receptor
    988 <400> SEQUENCE: 35
    989 Lys Gly Phe Phe Arg Arg
    990  1               5
E--> 997 1
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VERIFICATION SUMMARY DATE: 07/05/2001
PATENT APPLICATION: **US/09/807,148** TIME: 15:36:36

Input Set : **A:\Sequence Listing.txt**
Output Set: **N:\CRF3\07032001\I807148.raw**

L:11 M:270 C: Current Application Number differs, Replaced Current Application Number
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:620 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:10
L:629 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:639 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:11
L:644 M:257 W: Feature value mis-spelled or invalid, <221> Name/Key for SEQ ID#:11
L:653 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:997 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:35

10/807,148 07/05/2001 15:36:36

Pct/09

CRF Errors Corrected by the STIC Systems Branch

Serial Number: 09/807,148 ENTERED

CRF Processing Date: 7/23/2001

Edited by:

Verified by: _____ (STIC staff

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically:

- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____.
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically:

- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:

- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included:

- ☐ Deleted extra, invalid, headings used by an applicant, specifically:

- ☑ Deleted: ☑ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically:

- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically:

- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☑ Other: inserted 7" at end of inhibit"

"Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95